

## **ABSTRACT**

Dynamic tuning of a tunable filter within the receiver of a pulse-echo ranging system. A filter tuning module compares a transmit signal and a filtered signal to obtain a phase difference indicative of any mis-match between the resonant frequency of the tunable filter and the transmit frequency. The filter tuning module outputs a phase correction signal corresponding to the phase difference and a controller uses the phase correction signal to determine any adjustments necessary to minimize the phase difference. Adjustments to the tunable filter may be made with each 'shot' or transmission.